

Embedding Procedure Assistance into Mission Control Tools, Phase I

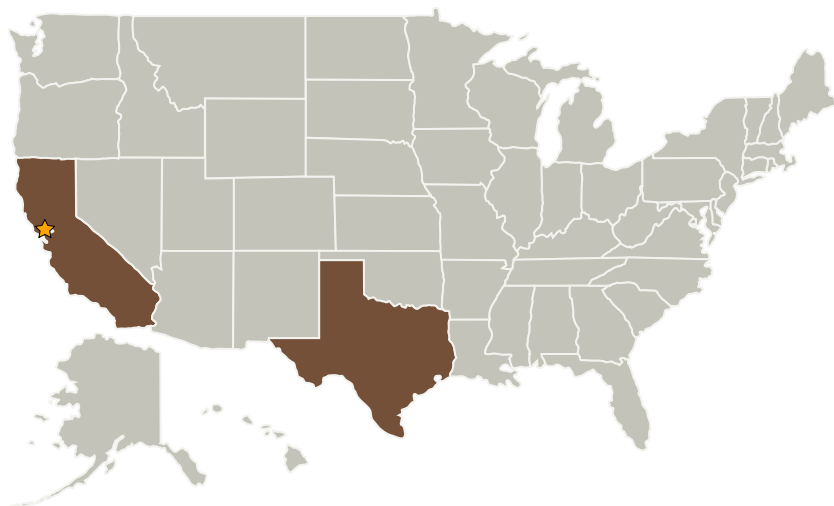


Completed Technology Project (2009 - 2009)

Project Introduction

Procedures are the accepted means of commanding spacecraft. Procedures encode the operational knowledge of a system as derived from system experts, testing, training and experience. NASA has tens of thousands of procedures for Space Shuttle and the International Space Station, which are used daily by both flight controllers and crew. It is expected that the new Constellation vehicles, including Orion, Altair and Lunar habitats, will have thousands of procedures to ensure safe operation. Currently procedures are executed manually using standard command and control displays. We are proposing a new paradigm whereby procedures interact closely with the next generation telemetry and command displays being developed for NASA and with a procedure assistant that can automatically dispatch commands and evaluate telemetry under tight supervision of the operator. The procedure assistant will consist of an interactive procedure display, a procedure assistant executive, a set of procedure support services and an editor for modifying existing procedures or building simple new procedures. In our paradigm procedures will be just like any other component of an integrated suite of mission control tools. This will greatly enhance the efficiency of flight controllers and reduce training costs associated with having a separate set of tools for procedures.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
TRAC Labs, Inc.	Supporting Organization	Industry	Webster, Texas

Primary U.S. Work Locations

California	Texas
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX10 Autonomous Systems
 - └ TX10.2 Reasoning and Acting
 - └ TX10.2.6 Fault Response